FINAL MEETING SUMMARY

HANFORD ADVISORY BOARD
RIVER AND PLATEAU COMMITTEE MEETING
February 9, 2005
Richland, WA

Topics in this Meeting Summary

This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.

Welcome and Introductions

Maynard Plahuta, committee co-chair, welcomed the committee and introductions were made. Changes were incorporated into the January meeting summary, and the summary was finalized.

Amendment to the Record of Decision (ROD) for the Environmental Restoration Disposal Facility (ERDF)

Julie Atwood, Bechtel Hanford, Inc.(BHI), project manager at ERDF, provided an overview of the proposed plan for an amendment to the ERDF ROD. She indicated that the purpose of the amendment is to promote the continued cleanup of Hanford by identifying a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process for disposal of Hanford-only generated cleanup waste at ERDF. The goal is to optimize existing disposal facilities at Hanford, reduce existing and future waste storage inventory, and engage in long-term stewardship for the protection of public health and the environment. Julie outlined the chronology of ERDF ROD amendments dating back to 1995 and also detailed some of the possible legacy waste streams going into ERDF. She explained that legacy waste is a relatively small waste stream that should not impact the overall capacity of ERDF.

Regulator Perspectives

Dave Einan, Environmental Protection Agency (EPA), said that the Effluent Treatment Facility (ETF) waste stream involves waste going through both CERCLA and Resource Conservation and Recovery Act (RCRA) processes. Since waste coming out of both regulatory processes is the same, it does not make sense to have two different treatment paths/regulatory processes.

Committee Discussion

- *What is the source of the leachate?* Julie stated that any source of leachate is from precipitation or moisture that is added during the treatment process (e.g., misting to protect workers from airborne particulates). Since moisture is sometimes added during the treatment process for waste compaction and misting for worker protection, some of the waste that goes to ERDF is wet. However, Julie emphasized that leachate production is still very low at ERDF.
- *Was modeling done to account for the liner remaining functional with the "bad actor" waste streams that are expected to be disposed in there?* Julie said that the release models do not take the liner into account when they are tested, since there are no claims that the liner system will last over long-term estimates. Tom Stoops said he was glad to hear that the models do not account for the liner since they are not guaranteed to last. Due to the committee's interest in the modeling design and assumptions, Joe Voice, Department of Energy-Richland Operations Office (DOE-RL), offered to come back with a presentation for the committee on the performance modeling that is used. Joe said he will also make sure that performance modeling is included in the upcoming caps workshop.
- *Will the plan account for administrative processes and regulations for dealing with non-CERCLA waste at ERDF?* Julie responded that in DOE's efforts to focus on making the best use of existing facilities, they need to be clear about how different waste streams are dealt with at ERDF. DOE is trying to move from waste storage to waste disposal. Julie said that DOE is trying to balance working towards integrating regulations for current waste streams, while also planning for future waste streams.

- Susan Leckband commented the Board needs to understand that this is end state disposal being discussed.

- *When will the proposed plan be coming out for public comment?* Julie explained that the proposed plan will be submitted to DOE-RL and EPA in February. The public comment period will be in February and March, and the ROD Amendment is planned to be issued in April 2005.

- Susan applauded the interagency cooperation on streamlining waste treatment processes and suggested the Board consider sending a letter of commendation to the agencies.
- The committee decided to present the Board with a draft letter of commendation to the agencies and have a presentation on the ERDF ROD Amendment at the March Board meeting. Todd Martin commented that Board has to hear about this issue, due to the Board's long history of dealing with ERDF. Dennis Faulk, EPA, added that a presentation on the ERDF ROD Amendment would help set the context for later discussions of the Integrated Disposal Facility (IDF).

Status of BC Cribs

Bryan Foley, DOE-RL, and Mark Benecke, Fluor Hanford, provided information on the status of the BC Cribs and Trenches Area remediation, including background, characterization, remedial alternatives in the feasibility study, and next steps.

Performing the characterization of the waste in the BC Cribs and trenches included extensive research of historical discharge inventories, geophysical data collection, and many analyses of well logs and trench boreholes. Based on this characterization, DOE believes it is known where the waste is that was dumped in the trenches 50 years ago. The characterization revealed that the plume of deep vadose zone contamination is widespread throughout the trench area. Although expected to be worse, contamination in the cribs did not migrate as far as contamination in the trenches. A human health risk exists with contamination near the surface, and the risk to groundwater by vadose zone contamination. Fate and transport modeling predict it will take 100-120 years for technetium-99 (Tc-99) in the groundwater to reach maximum contaminant levels (MCLs).

The remedial alternatives being considered to address human and environmental health risks are: 1) no action; 2) Monitored Natural Attenuation and continuation of institutional controls; 3) excavation to remove contamination; 4) capping; and, 5) partial excavation combined with capping. The first two alternatives were dismissed as unviable, because they do not address the human health risk. Excavation was considered, but would result in an enormous hole that would expose waste and exceed the current capacity of ERDF. The capping alternative would delay contaminant migration. Fluor is also looking at whether the technology for soil dessication to treat deep soil contaminants is effective.

DOE would like guidance from the Board on how to evaluate the human health risk associated with near-surface contamination. DOE would propose to put it under a cap, which would consider intruder dose exposure. If waste material is removed, it would be disposed of in ERDF. Which is more important to consider: dose exposure to workers in the removal alternative, or the potential risk of intruder dose exposure if contamination is left in place?

Regulator Perspectives

Dennis Faulk commented that the findings relating to Tc-99 concentrations validated the base assumptions used in the composite analysis: it wasn't a great concern. It is important to determine if there are moisture zones at the depth where Tc-99 concentrations are higher. Any moisture areas with Tc-99 should be considered for drying. EPA will be asking DOE to investigate new technologies for drying subsurface areas out.

Regarding trenches, the major public policy questions are: How likely is it that someone will get into the waste? How likely is it that institutional controls will mitigate that risk? In-situ vitrification has been considered for the site, and it was determined that such treatment is not efficient or effective. If excavation is deemed appropriate, excavation in this area will not be as deep as the alternative suggests. The agencies know that, on one hand, if hot spots are targeted for excavation, the additional cost of mitigating the dose exposure risk to workers will be a significant issue. On the other hand, it takes about 300 years for contamination to decay to a level where there is not a significant intruder dose exposure risk. Dennis said EPA believes the choice is between the alternative employing partial excavation of contaminated areas combined with a cap and the alternative for capping, and that it is difficult to select between the two.

Committee Discussion

- The committee discussed the results of the geophysical survey done on the cribs and trenches, and asked whether there is a geologic feature that is causing the anomalous soil conductivity regions. Mark responded that beyond 130 feet there is not much that would soak up liquid and prohibit lateral transport of contaminated liquid.

- *Were similar profiles done for near-surface contamination?* Mark said that near-surface profiles were not done, and that all the information on contamination in those areas is based on is a series of bore holes punched equally along the trenches.

- *Does the evaluation of the excavation alternative assume worker dose exposure during excavation?* Mark said worker dose exposure risk was considered. The protective glass on the machinery used during excavation would provide additional protection to workers.

- *Has the resistivity modeling been checked against soil samples from various drillings on the site?* Mark stated that the bore hole through the 216-B-26 Trench showed contamination layers (high resolution resistivity) that corroborated resistivity profiles. Mark said soil inventories are getting better all the time, and always improve the model.

- The committee discussed the various treatment alternatives for crib and trench contamination. Madeleine Brown commented that this contamination was not a result

of a spill or leak, but instead was a conscious direct discharge of tank waste into the ground. Therefore, the most protective option available at the time of original discharge for treating waste should be identified, and at least that much money should be spent now to clean up the contamination.

- *How much of the contaminated soil that would be evacuated qualifies as transuranic (TRU) waste?* Mark and Bryan explained that none of the contaminated soil qualifies as TRU waste. Rick Jansons commented that the dose and risk assessment says there is no TRU waste in the cribs and trenches, but there is an indication that there actually is plutonium in those areas. Mark said that the scavenged waste stream does not contain plutonium.

- Gerry Pollet commented that the exposure scenarios done for Tc-99 and for dose exposure did not discuss chemical and hazardous risk to intruder. Mark responded that those intruder risks are very minor. Dennis explained that there will be other chemicals in the waste, but those chemicals would not drive the cleanup. In this case, radiation risk dominates the risk evaluation. John Price, Washington State Department of Ecology (Ecology), added that chemicals were not observed in the trenches themselves, and that chemicals in bore holes were not significant.

- *Why is worker dose exposure lower than potential intruder dose exposure in the remediation plan?* Dennis responded that the documents and figures are still internal to Fluor, so numbers will likely change before it is released. A potential intruder has multiple pathways for exposure (e.g., direct exposure, consuming products from contaminated soil, etc), so intruder dose exposure is higher than worker dose exposure, which can be limited to one source. Joe Voice added that the numbers don't appear to make sense since most of the dose is from direct exposure, and that this is draft information not in its final form.

- Susan said that she would like to know the specific definitions of ditch, trench, and crib; most people probably assume they are all the same thing, which is not the case. She commented that the layout of the cribs indicates that whatever was dumped in Crib 28 mixed with Crib 52, so if no excavation is done an enormous cap would be needed to cover the contaminated area.

- Shelley commented that there is a need to think big picture and determine how many more of these areas exist, and if a similar treatment process is going to be done for other areas. Dennis explained that there are probably only about a handful of sites with this contamination scenario, so in the scheme of 800 waste sites, this is a smaller issue. Dennis explained that the real concern is about future human intrusion. How much faith do we have that people will not get into these areas well into the future?

- *Does the transport modeling indicate significant differences in risk based on when the area is capped?* John Morse, DOE-RL, said that the sooner a cap is installed, the

better, but that modeling is not sensitive enough to pickup those type of differences.

- *When will a report on the geophysical analysis be made available?* Bryan said that the Focused Feasibility Study (FFS) is tentatively scheduled to go through EPA review in March 2005, be available for public review in May 2005, and have the ROD completed in late summer.

- *When trying to evaluate the different risks associated with dose exposure and groundwater contamination, how is the performance modeling done?* John Morse suggested that monitoring would be done for the next 300 years. Dennis explained that the agencies are not looking for any definitive answers at this point. However, since the treatment of these areas is one of the major public policy interests in the near future, there needs to be discussion of the topic over the next few months.

- Joe Voice reminded the committee that these are an early set of results, which were brought to the committee as an example of things DOE is doing (i.e. a working case study). He encouraged the committee not to look at this document as a final document, but as an example case study of what has to be addressed at the Hanford site in order to develop some kind of decision tree for remedial action.

Groundwater Protection Program

Dick Wilde, Fluor, provided the committee with an update on the groundwater protection program, following the plan discussed at the Board meeting in Portland. Dick focused specifically on the process of decommissioning wells. In order to take care of water, actions must not be limited to just one thing; groundwater protection requires several activities and monitoring. To deal with high risk waste sites in the U-Plant area, all water in the area needs to be stopped (e.g., septic, re-line water pipes to prevent leaking, etc.). There will be a study of the Uranium plume area to determine how the system reacts when pumps are stopped.

Dick updated the committee on well decommissioning and demolition (D&D). There are over 7,000 penetrations throughout the Hanford site. Many are not risky, but there are some very risky ones near (within 100 ft.) of waste sites. Four-hundred and twenty wells are scheduled to be decommissioned in four years. The riskiest wells are going through the D&D process first. Explosives are being used for well D&D, and 146 have been done to date. Dick explained that the well casings cannot be pulled out, so blasting is used to disperse material into the soil and then cement is pushed down to fill out the space. Monitoring wells are not going through D&D. Dick encouraged committee members to come out and watch the D&D activities.

Dick also provided a brief update on Hanford groundwater pump and treat contaminant plumes:

- In 100-H Area, the source terms for chromium-6 have been taken out. There has been significant reduction in the groundwater chromium plume.

- In 100-D Area, there is a hexavalent chromium contamination issue. A new extraction system with new treatment technology has been employed and is effective. However, the plume source is unknown, making extraction more difficult. Therefore, the focus is on containing and treating contaminants.
- In 100-K Area, new technology for chromate is being used, which withdraws groundwater, provides treatment, and injects water upgradient.
- In 100-N Area, there has been a significant reduction in the groundwater strontium-90 plume. However, in this area, the pump and treat method does not do an adequate job. The heart of the plume is being removed and more extraction wells are being added.
- At the Z-9 Crib area, a well was just finished to do characterization and a CERCLA process for cleaning up the soil. A well next door is also being used as a vapor extraction well.

Dick reiterated to the committee that a plan has been laid out, it is being funded, and it is being accomplished.

Regulator Perspectives

Dennis said there has been lots of good work done on groundwater, but a tremendous amount remains left to do. Dealing with groundwater contamination is a very complicated process, involving information from multiple sources to evaluate groundwater conditions and needs.

Committee Discussion

- *Are the efforts of the groundwater protection program integrated with the BC Cribs effort?* Dick said it was integrated with the BC Cribs effort, since waste sites cannot be dealt with without considering groundwater. As part of that integration, groundwater monitoring is being done, with two wells going in down gradient from the BC Cribs area to evaluate potential impacts of waste sites on groundwater.

- There will be a workshop later this year and Board members would be welcome.

Draft Advice on Transuranic (TRU) Waste

Maynard introduced Rick Jansons's draft advice to the committee regarding TRU waste. He emphasized that the committee should not focus on "word-smithing" the document, but instead determine whether the content is appropriate for taking the document to the Board. Rick's effort to draft advice on TRU came out of the River and Plateau Committee (RAP) meeting in December. The advice makes three points: pre-1970 TRU is not part of current DOE plans to retrieve, treat, and dispose; it is unknown how much pre-1970 TRU there is and containers are in bad condition; and, budgets are decreasing, so DOE needs to address TRU before funding is lost.

Committee Discussion

- Harold Heacock commented that we do not know how much TRU there is, what condition it is in, and there is conjecture that what people label as pre-1970 TRU is not really TRU waste. What is missing is a characterization of the waste and an overall risk analysis for that waste. Harold said the bottom line is that DOE has made an assumption that they are not going to do anything with pre-1970 TRU without any substantiation for that position.

- Dennis explained there are really two main issues: 1) pre1970 TRU in the solid waste burial grounds, which Ecology and DOE are currently discussing; and, 2) doing waste characterization based on a records search of where waste is disposed. John Price explained that DOE delivered a draft workplan for the burial grounds to Ecology, which demonstrates the agreement between DOE and Ecology to discuss differences on issues.

- In terms of the draft advice, Dennis explained that there is a fundamentally different approach when you think everything will be capped. Getting questions right the first time is key. He commented that advice on TRU waste is important advice to do and the timing is perfect, but it should be written in the broader context of the regulatory process that is going on.

- Susan attempted to clarify the three main bullets: 1) all buried waste should be characterized and properly dispositioned; 2) waste buried before 1970 should not be treated differently than waste buried after 1970; 3) treatment funding has to remain. Gerry added the advice should also say that the Board is not presuming a cap.

- Dennis said it would be most helpful for the regulatory agencies for the advice to focus specifically on TRU waste at this point, since the issue will play out on a bigger stage than just at Hanford.

- Vince Panesko presented a map he made displaying all the areas that are scheduled to be capped. The committee wanted Vince to provide his map for the upcoming caps workshop.

- Rick will redraft the advice using the committee's feedback and suggestions. The new draft advice will be circulated to the committee prior to the Board meeting.

Decision Documents Check-in and Look Ahead

- The public comment period on the Proposed Plan for 200 BC Cribs and Trenches is expected to be May-June.

- Dick Smith is taking the lead on the Proposed Plan for the U-Plant Area Soil Waste Sites, which should be available early April.

Committee Business

- The committee indicated that May would work better than April for scheduling the 300 Area End States workshop.

- Joe Voice said there has been some discussion about chartering, membership, and activities of the Interagency Management Integration Team (IAMIT) workgroups. The practice of Board members observing IAMIT work group meetings will continue. Dennis said that some IAMIT groups felt they had completed their mission and were done. Other groups had issues with the right questions not being asked, and now the meetings are no longer effective. In those cases, some smaller sub-groups are meeting in an effort to be productive. Joe said that he wanted to dispel the idea that the IAMIT work groups are decision-making bodies. They were never chartered as places where decisions were being made. In order to keep Board members informed about IAMIT activities, Joe will send the calendar to EnviroIssues to send out to Board members.

- Joe also informed the committee that Board members are welcome to sit in as observers on the regular Tri-party Agreement (TPA) milestone review. The next milestone review is February 22.

- Dennis suggested arranging another site visit in order to clarify the discussion concerning several issues.

- The committee decided that no March meeting or committee call is necessary. Draft advice will be circulated via e-mail.

- Susan read the draft letter to congratulate DOE on its Amendment to the ERDF ROD. The committee liked the letter, and it will go forward for the March Board meeting.

Handouts

- Proposed Plan for an Amendment to the Environmental Restoration Facility Record of Decision, Julie Atwood, BHI, 2/9/2005.
- BC Cribs and Trenches Area Remediation, Bryan Foley, DOE-RL, and Mark Benecke, Fluor, 2/9/2005.
- Hanford River and Plateau Committee Meeting, Dick Wilde, Fluor, 2/9/2005.
- Draft Advice [pre-1970 TRU], Rev. 2, Rick Jansons, 2/9/2005.
- 2005 Meetings and Public Comment Periods Timeline, 2/9/2005.

Attendees

HAB Members and Alternates

Madeleine Brown	Nancy Murray (phone)	Dick Smith
Shelley Cimon	Vince Panesko	John Stanfill
Harold Heacock	Gary Peterson	Tom Stoops
Rick Jansons	Maynard Plahuta	Dave Watrous
Susan Leckband	Gerry Pollet	
Todd Martin	Mike Priddy	

Others

Steve Chalk, DOE-RL	John Price, Ecology	Julie Atwood, BBHI
Bryan Foley, DOE-RL	Ron Skinnarland, Ecology	Tom Lazarsky, BHI
John Morse, DOE-RL		Todd Nelson, BHI
Owen Robertson, DOE-RL	Dave Einan, EPA	Margo Qualheim, BHI
Joe Voice, DOE-RL	Dennis Faulk, EPA	Dru Butler, CHG
		Lynn Lefkoff, EnviroIssues
		Jason Mulvihill-Kuntz, EnviroIssues
		Mark Benecke, FH
		Lanny Dusek, FH
		Mike Hickey, FH
		Barbara Wise, FH
		Kim Ballinger, Nuvotec/OPR